DARBY & DARBY

Professional Corporation

INTELLECTUAL PROPERTY LAW

LOS ANGELES
707 Wilshire Boulevard
33nd Floor
Los Angeles, CA 90017-3614

TELEPHONE: (213) 243-5000
FACSIMILE: (213) 243-5050

FACSIMILE TRANSMITTAL COVER SHEET

DATE:	November 29, 1999
TO:	Mr. Brad Konia
COMPANY/FIRM:	Web Marketing.nu, Inc.
FAX NUMBER:	305-513-5852
TELEPHONE NUMBER:	305-532-4277
FROM:	Ivan Posey
SUBJECT:	Draft Patent Application
OUR DOCKET NUMBER:	9403-0F255US0
PAGES, INCLUDING THIS PAGE:	40

COMMENTS:

CONFIRMATORY MAILED TODAY.

TRANSMISSION REPORT

THIS DOCUMENT WAS CONFIRMED
(REDUCED SAMPLE ABOVE - SEE DETAILS BELOW)

** COUNT **
TOTAL PAGES SCANNED : 40
TOTAL PAGES CONFIRMED : 40

*** SEND ***

No.	REMOTE STATION	START TIME	DURATION	#PAGES	MODE	RESULTS
1	1stPlaceRanking	11-29-99 3:56PM	9'36"	40/ 40	EC	COMPLETED 14400

TOTAL 0:09'36" 40

NOTE:
No. : OPERATION NUMBER 48 : 4800BPS SELECTED EC : ERROR CORRECT G2 : G2 COMMUNICATION
PD : POLLED BY REMOTE SF : STORE & FORWARD RI : RELAY INITIATE RS : RELAY STATION
MB : SEND TO MAILBOX PG : POLLING A REMOTE MP : MULTI-POLLING RM : RECEIVE TO MEMORY

DARBY &
DARBY
PROFESSIONAL
CORPORATION

INTELLECTUAL PROPERTY LAW

LOS ANGELES
707 WILSHIRE BOULEVARD
LOS ANGELES, CA 90017-3514
TEL (213) 243-8000
FAX (213) 243-8050

NEW YORK
805 THIRD AVENUE
NEW YORK, NY 10022-7513
TEL (212) 527-7700
FAX (212) 753-6237

November 29, 1999
VIA FACSIMILE

IVAN POSEY
ATTORNEY AT LAW
213-234-8000
iposey@darbylaw.com

Reference: 9403-0F255US0

Mr. Brad Konia
Vice President
Web Marketing.nu, Inc.
1500 Bay Road, Suite 1502
Miami Beach, Florida 33139

Re: Draft Patent Application
Entitled: ONLINE AUCTION BID
MANAGEMENT SYSTEM AND METHOD

Dear Brad:

As mentioned in my e-mail, attached please find a draft of the full text and drawings for the above entitled patent application.

Very truly yours,

Ivan Posey
For DARBY & DARBY P.C.

IP:rlm
Enc.

ONLINE AUCTION BID MANAGEMENT SYSTEM AND METHOD

BACKGROUND OF THE INVENTION

For conventional online auctions such as that by EBAY by ebay, Inc. of San Jose, California, each item can only be sold once to the highest bidder. When the bid is accepted, the auction is over.

Continuous auctions include those for bidding for Internet search engine key-phrases in order to achieve the highest possible rankings on a search engine. The search engine found at GOTO.COM by Goto.com, Inc. of Pasadena, California is an exemplary continues auction. In this type of auction, the search engine lists web-page search results for a key-phrase search in the order of bid prices from advertisers. The advertiser with the highest bid for a given key-phrase appears first in the list, the next highest bidder appears second, etc. Since key-phrases are intangible, the same key-phrase can be sold to an unlimited number of users and the auction runs continuously with the rankings changing according to the current bids from advertisers.

As these and other types of continuous auctions become more common in many areas of commerce, it will become more difficult for bidders to monitor bids in several different auctions.

There exists a need for a system that monitors the current rankings in auctions and automatically adjusts its bids according to the rules defined by its user.

SUMMARY OF THE INVENTION

A method and system for automatically managing an auction for determining relative priority for a service in a system wherein priority is based on the relative value of related bids is disclosed. The method comprises checking for whether a first bid exceeds a second bid in an auction for determining continuing priority for providing an ongoing service for at least a first

and second bidder, wherein the relative priority for providing the service for the first bidder is dependent on whether the value of the first bid exceeds the value of the second bid, and wherein the relative priority for providing the service for the second bidder is dependent on whether the value of the second bid exceeds the value of the first bid. The method further comprises incrementing the first bid to a value exceeding the second bid if the first bid does not exceed the second bid, thereby causing the relative priority for providing service for the first bidder to exceed the priority for providing service for the second bidder. The steps of checking and incrementing may be executed a plurality of times. The system may pause for a fixed period of time between each series of steps of checking and incrementing.

The service provided to the bidders may comprise providing ranking of hypertext links to web pages in search results in an on-line web page search engine, wherein ranking of a first hypertext link to a first web page for the first bidder is higher than the ranking of a second hypertext link to a second web page for the second bidder if the first bid is higher than the second bid.

The method may comprise placing bids on a plurality of search terms which may be typed into the search engine by search engine users wherein different ranking is determined for each search term, wherein the ranking of the first hypertext link is higher than the second hypertext link if the first bid is higher than the second bid for each of the plurality of search terms. The steps of checking and incrementing is executed for a plurality of search engines for the plurality of search terms.

A system for automatically managing the auction for determining relative priority for the service in a system wherein priority is based on the relative value of related bids is further

disclosed. The system may comprise a processor electrically connected to a network, which is electrically connected to the plurality of search engines. A database is electrically connected to the system for storing and managing the bids.

A system and method for automatically managing an auction for determining relative priority for vendors for selling to several buyers based on the relative value of related bid is further disclosed. The system comprises a processor electrically connected to a network for checking for whether a first bid is lower than a second bid in an auction for determining priority on a server electrically connected to the network for ranking selling priority for a first and second vendor, wherein the relative priority for selling by the first vendor is dependent on whether the value of the first bid is lower than the value of the second bid, and wherein the relative priority for selling by the second vendor is dependent on whether the value of the second bid is lower than the value of the first bid. The processor is further for for decrementing the first bid to a value lower the second bid if the first bid is not lower than the second bid, thereby causing the relative priority for the first vendor exceed the priority for second bidder.

BRIEF DESCRIPTION OF THE DRAWINGS

For a fuller understanding of the invention, reference is made to the following description taken in connection with the accompanying drawings, in which:

Fig. 1 is a block diagram illustrating an exemplary system architecture for one embodiment of the present invention;

Figs. 2-3 are flow diagrams illustrating a method performed by the system of Fig 1;

Fig. 4 is a block diagram illustrating an exemplary system architecture for another embodiment of the present invention;

Fig. 5 is a flow diagram illustrating a method performed by the system of Fig 4;

Fig. 6 is a block diagram illustrating an exemplary system architecture for another embodiment of the present invention;

Fig. 7 is a flow diagram illustrating a method performed by the system of Fig 6;

Fig. 8, is a block diagram illustrating an exemplary system architecture for another embodiment of the present invention;

Fig. 9 is a flow diagram illustrating a method performed by the system of Fig 8; and

Fig. 10, is a flow diagram illustrating the steps performed by a buyer server of the system of Fig. 8.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to Fig. 1, a block diagram illustrating an exemplary system architecture for one embodiment of the present invention is shown. The system comprises a server 100 comprising an online bid management system 102 for automatically managing an auction for determining relative priority for a service in a system wherein priority is based on the relative value of related bids.

The bid management server 100 comprises a processor electrically connected to a network. As those skilled in the art would recognize, the online bid management server 100 may comprise a standard RISC or CISC processor running the NT operating system by the Microsoft

Corp. of Redmond, Washington, or a suitable UNIX server such as an ENTERPRISE Server by Sun Microsystems of Palo Alto, California, or an AS400 System by the IBM Corporation, USA.

Bids are made from bidder terminals or computers 175 (called bidder terminals herein) which may comprise Internet terminals with keyboards as one skilled in the art would recognize. A User may enter a bid into the online bid management system 102 through a bidder terminal 175, which transmits the bid to the bid management server 100. As it receives bids from bidder terminals 175, the online bid management system 102 prioritizes the bids periodically. The online bid management system 102 determines continuing priority for providing an ongoing service to the bidders.

The relative priorities for providing the service for bidders for their bids received from the bidder terminals 175 are dependent on whether their bids exceed the value of other bids.

The server 100 may further comprise a database 104 comprising a relational database management system (RDBMS) 104 for storing bids and data relating to the service provided to the bidders. Bidders may further enter maximum and/or minimum bids into the bidder terminals 175. The online bid management system 102 keeps track of the maximum and minimum bids for each user who enters bids into the bidder terminals 175 into RDBMS 104. The online bid management system 102 will increment the lower bids until they reach desired bidding positions entered by the bidders as long as the bids do not exceed maximum values entered by the respective bidders. Thus, the online bid management system 102 causes the relative priority for providing service to each bidder to exceed the priority for providing service with respect to other bidders as long as the maximum bid is not exceeded, or until a desired position is reached. The

online bid management system is further programmed to check and increment the bids a plurality of times, pausing for a fixed period of time between each checking and incrementing.

For the embodiment of Fig. 1, the service provided to the users of bidder terminals 175 comprises providing ranking of hypertext links to web pages in search results in an online web page search engine stored either on the online bid management server 100, or in one or more of several search engines 150 stored on a plurality of servers, wherein the users bid on ranking results for their web pages for terms typed into the one or more search engines 150. The search engines rank hypertext links in search results presented after a search term is entered. The web pages of bidders that bid higher than other bidders having web pages bidding for the same term are ranked higher on the search results. The online bid management system 102 receives maximum and minimum bids on a plurality of search terms that may be typed into the search engine by search engine users wherein different rankings are determined for each search term for each of a plurality of bidders.

One of the plurality of search engines 150a may be directly electrically connected to the online bid management sever 100 to facilitate faster updating of ranking of hypertext links on the search engine 150a. Similarly, a bidder terminal 175a may be directly electrically connected to the online bid management server 100 so that bids may be updated faster to the online bid management system 102.

As an alternative to having a centralized bid management system 102, the online bid management system may be stored locally on one or more bidder terminals 175b. The bidder terminal 175b comprises or is electrically connected to an RDBMS 104 which keeps track of bids

made on the bidder terminal 175b by one or several users. The system on the bidder terminal 175b works in similar fashion to that of the on the online bid management server 100.

With reference to Fig. 2 a flow diagram illustrating a method performed by the online bid management systems 102 of Fig 1 is shown. The method is for automatically managing the auction for determining relative priority for a service in a system wherein priority is based on the relative value of related bids. The system is programmed into a series of nested loops. The outer loop, starting at step 200, comprises a timing mechanism which times the updating of bids for a plurality of search engines 150. At step 202, the system loops through each subscribing bidder's bids for bidders who have subscribed to the management system 102. At step 204, the system loops through each search engine 150 for which the particular bidder has bid on terms for ranking their web site.

Processing moves temporary to Fig. 3, where the system checks to see if the current search engine in the loop supports a direct database interface, step 300. With respect to this step, certain search engines may comply with the system, allowing the online bid management system 102 to directly access and update bid rankings on their search engine. If such is the case, processing moves to step 302 which implements the direct querying and updating of the search engine 150. Otherwise, processing moves to step 304 for which the online bid management system 102 affects queries and updates to the search engine through the particular search engine's web interface. After enabling access to the search engine 150, processing moves to step 206 in Fig. 2.

In step 206, the system loops through each term that the bidder has bid on in the current search engine 150 of the loop established in step 204. The system checks for whether the

bidder's desired position is met for the particular web page and term, step 208. For example, the system checks for whether the bidder's bid exceeds all other bids in the auction for determining continuing priority for listing the bidder's web page. Another example allows the bidder to choose a position, such as fourth in the results listing. If the system finds that the bidder has achieved the proper position in the search engine with respect to the current term being processed, the system may reduce the bid to a minimum which allows the bidder to keep the position, step 210. Otherwise, the system increases the bid without exceeding the maximum bid entered by the bidder, step 212.

The system re-checks the position held by the bidder, step 214. If the desired position is not achieved, step 216, the system checks to see if the bidder had set a notification flag so that the bidder would be notified if the desired position had not been achieved, step 218. If the bidder had desired to be notified, the bidder is notified, step 220. Notification may be by a standard technique such as e-mail.

The system checks to see if the last term for the current search engine has been checked, step 222. If the last term has not been checked for the current search engine, then processing moves back to step 206. Otherwise, the system checks to see if the last search engine has been addressed for the current user, step 224. If not, then processing moves back to step 204. Otherwise, the system checks to see the last bidder's positions have been checked, step 226. If not, then processing moves back to step 202. Otherwise, the system checks the timing loop, in this case a quarter day, for whether it is time to process all of the bidders' positions again, steps 228-230. Once the timer has determined that it is time to check the bidders' positions again, processing moves back to step 200.

With reference to Fig. 4, a block diagram illustrating an exemplary system architecture for another embodiment of the present invention for managing golf course tee-off time reservations is shown. The system comprises a server 100 comprising an online bid management system 102 for automatically managing an auction for determining relative priority for a service in a system wherein priority is based on the relative value of related bids.

As with the server 100 of Fig. 1, the bid management server 100 comprises a processor electrically connected to a network. As those skilled in the art would recognize, the online bid management server 100 may comprise a standard RISC or CISC processor running the NT operating system by the Microsoft Corp. of Redmond, Washington, or a suitable UNIX server such as an ENTERPRISE Server by Sun Microsystems of Palo Alto, California, or an AS400 System by the IBM Corporation, USA.

Bids are made from bidder terminals 177 (called golfer reservation terminals in Fig. 4) which may comprise Internet terminals with keyboards as one skilled in the art would recognize. A user may enter a bid into the online bid management system 102 through a bidder terminal 177, which transmits the bid to the bid management server 100. As it receives bids from bidder terminals 177, the online bid management system 102 prioritizes the bids periodically. The online bid management system 102 determines continuing priority for providing an ongoing service to the bidders.

The relative priorities for providing the service for bidders for their bids received from the bidder terminals 177 are dependent on whether their bids exceed the value of other bids.

The server 100 may further comprise a database 104 comprising a relational database management system (RDBMS) 104 for storing bids and data relating to the service provided to

the bidders. Bidders may further enter maximum and/or minimum bids into the bidder terminals 177. The online bid management system 102 keeps track of the maximum and minimum bids for each user who enters bids into the bidder terminals 177 into RDBMS 104. The online bid management system 102 will increment the lower bids until they reach desired bidding positions entered by the bidders as long as the bids do not exceed maximum values entered by the respective bidders. Thus, the online bid management system 102 causes the relative priority for providing service to each bidder to exceed the priority for providing service with respect to other bidders as long as the maximum bid is not exceeded, or until a desired position is reached. The online bid management system is further programmed to check and increment the bids a plurality of times, pausing for a fixed period of time between each checking and incrementing.

For the embodiment of Fig. 4, the service provided to the users of bidder terminals 177 comprises providing ranking of priority for golf course tee-off times on one or several golf courses having golf club reservation servers 152. On their reservation servers 152, golf courses may rank premium tee-off times based on what their members, or the public for public courses, are willing to pay. For example, a premium tee-off time may be 9:00am Saturday morning. Bids may be accepted for the 9:00am tee-off time, the highest bidder receiving the 9:00am time, with other bidders bidding less than the highest bidder receiving tee-off times as close to the 9:00am time as possible for each particular bid. The online bid management system 102 receives maximum and minimum bids on a plurality of golf courses wherein tee-off times are determined by bidding.

One of the plurality of reservation servers 152a may be directly, electrically, connected to the online bid management sever 100 to facilitate faster updating of ranking of golf reservations

on the reservation server 152a. Similarly, a bidder terminal 177a may be directly electrically connected to the online bid management server 100 so that bids may be updated faster to the online bid management system 102.

As an alternative to having a centralized bid management system 102, the online bid management system 102 may be stored locally on one or more bidder terminals 177b. The bidder terminal 177b comprises or is electrically connected to an RDBMS 104 which keeps track of bids made on the bidder terminal 177b by one or several golfers. The system on the bidder terminal 177b works in similar fashion to that on the online bid management server 100.

With reference to Fig. 5 a flow diagram illustrating a method performed by the online bid management systems 102 of Fig 4 is shown. The method is for automatically managing the auction for determining relative priority for a service in a system wherein priority is based on the relative value of related bids. The system is programmed into a series of nested loops. The outer loop, starting at step 500, comprises a timing mechanism which times the updating of bids for a plurality of search engines 150. At step 502, the system loops through the bids for each golfer made bids on for one or more golf courses on the bid management system 102. At step 504, the system loops through each bid for each golf club bid upon for a tee-time by the golfer.

The system checks for whether the golfer's desired position is met for tee-off time priority on a particular course, step 506. For example, the system checks for whether the golfer's bid exceeds all other bids in the auction for determining priority for a preferred tee-time. Another example allows the bidder to choose a tee-time, such as 9:30am instead of the premium time of 9:00am. If the system finds that the golfer has achieved the requested tee-time priority in the search engine with respect to the current golf reservation server 152 processed, the system

may reduce the bid to a minimum which allows the bidder to keep the desired tee-time, step 510. Otherwise, the system increases the bid without exceeding the maximum bid entered by the golfer, step 512.

The system re-checks the position held by the golfer, step 514. If the desired position is not achieved, step 516, the system checks to see if the golfer had set a notification flag so that the golfer would be notified if the desired position had not been achieved, step 518. If the golfer had desired to be notified, the golfer is notified, step 520. Notification may be by a standard technique such as e-mail or voice telecommunication.

The system checks to see if the last golf club for the current golfer has been checked, step 522. If the last golf club has not been checked for the current golfer, then processing moves back to step 504. Otherwise, the system checks to see the last golfer's positions have been checked, step 526. If not, then processing moves back to step 502. Otherwise, the system checks the timing loop, in this case a quarter day, for whether it is time to process all of the golfers' positions again, steps 528-530. Once the timer has determined that it is time to check the golfers' positions again, processing moves back to step 500.

With reference to Fig. 6, a block diagram illustrating an exemplary system architecture for another embodiment of the present invention for managing frequent flyer reservations on airlines is shown. As with the embodiments shown in Figs. 1 and 4, the system comprises a server 100 comprising an online bid management system 102 for automatically managing an auction for determining relative priority for a service in a system wherein priority is based on the relative value of related bids.

As with the server 100 of Figs. 1 and 4, the bid management server 100 comprises a processor electrically connected to a network. As those skilled in the art would recognize, the online bid management server 100 may comprise a standard RISC or CISC processor running the NT operating system by the Microsoft Corp. of Redmond, Washington, or a suitable UNIX server such as an ENTERPRISE Server by Sun Microsystems of Palo Alto, California, or an AS400 System by the IBM Corporation, USA.

Bids are made from bidder terminals 179 (called frequent flyer reservation terminals in Fig. 6) which may comprise Internet terminals with keyboards as one skilled in the art would recognize. A frequent flyer member may enter a bid into the online bid management system 102 through a bidder terminal 179, which transmits the bid to the bid management server 100. As it receives bids from bidder terminals 179, the online bid management system 102 prioritizes the bids periodically. The online bid management system 102 determines continuing priority for providing an ongoing service to the frequent flyers.

The relative priorities for providing the service for frequent flyers for their bids received from the bidder terminals 179 are dependent on whether their bids exceed the value of other bids.

The bid management server 100 may further comprise a database 104 comprising a relational database management system (RDBMS) 104 for storing bids and data relating to the service provided to the frequent flyers. Frequent flyers may further enter maximum and/or minimum bids into the bidder terminals 179. The online bid management system 102 keeps track of the maximum and minimum bids for each frequent flyer who enters bids into the bidder terminals 179 into RDBMS 104. The online bid management system 102 will increment the lower bids until they reach desired bidding positions entered by the frequent flyers as long as the

bids do not exceed maximum values entered by the respective frequent flyers. Thus, the online bid management system 102 causes the relative priority for providing service to each frequent flyer to exceed the priority for providing service with respect to other frequent flyers as long as the maximum bid is not exceeded, or until a desired position is reached. The online bid management system is further programmed to check and increment the bids a plurality of times, pausing for a fixed period of time between each checking and incrementing.

For the embodiment of Fig. 6, the service provided to the users of bidder terminals 179 comprises providing ranking of priority for airline reservations on one or several airlines having airline reservation servers 154. On their reservation servers 154, airlines may rank premium seats based on what their frequent flyer club members are willing to pay. For example, a premium seat may be a seat in the first class section of a flight between Los Angeles and New York, a highly traveled route. Bids may be accepted for the first class seats, the highest bidder receiving the first choice in the first class lounge of the flight, with other bidders bidding less than the highest bidder receiving subsequent choices for seating for each particular bid, all the way down to the least desirable seat for the flight. Premium times on flight schedules may be auctioned in similar manner. The online bid management system 102 receives maximum and minimum bids on a plurality of airlines for which seating is determined by bidding.

One of the plurality of reservation servers 154a may be directly, electrically, connected to the online bid management sever 100 to facilitate faster updating of ranking of flight reservations on the reservation server 154a. Similarly, a bidder terminal 179a may be directly electrically connected to the online bid management server 100 so that bids may be updated faster to the online bid management system 102.

As an alternative to having a centralized bid management system 102, the online bid management system 102 may be stored locally on one or more bidder terminals 179b. The bidder terminal 179b comprises or is electrically connected to an RDBMS 104 which keeps track of bids made on the bidder terminal 179b by one or several frequent flyers. The system on the bidder terminal 179b works in similar fashion to that on the online bid management server 100.

With reference to Fig. 7 a flow diagram illustrating a method performed by the online bid management systems 102 of Fig 6 is shown. The method is for automatically managing the auction for determining relative priority for a service in a system wherein priority is based on the relative value of related bids. The system is programmed into a series of nested loops. The outer loop, starting at step 700, comprises a timing mechanism or procedure which times the updating of bids for a plurality frequent flyer servers 154. At step 702, the system loops through the bids for each frequent flyer who made bids on the bid management system 102. At step 704, the system loops through each bid for each airline for which bids are submitted by the particular frequent flyer.

The system checks for whether the frequent flyer's desired position is met for determining seating priority for a particular airline, step 706. For example, the system checks for whether the frequent flyer's bid exceeds all other bids in the auction for determining priority for preferred seating. Another example allows the bidder to choose a desired seat, such as first-class front row, and the system can determine the cheapest position that can be taken for the frequent flyer to be given that seat selection relative to the other frequent flyers. If the system finds that the frequent flyer has achieved the desired seating priority in the search engine with respect to the current frequent flyer reservation server 154 processed, the system may reduce the bid to a

minimum which allows the frequent flyer to keep the desired seating priority, step 710. Otherwise, the system increases the bid without exceeding the maximum bid entered by the frequent flyer, step 712.

The system re-checks the position held by the frequent flyer, step 714. If the desired position is not achieved, step 716, the system checks to see if the frequent flyer had set a notification flag so that the frequent flyer would be notified if the desired position had not been achieved, step 718. If the frequent flyer had desired to be notified, the frequent flyer is notified, step 720. Notification may be by a standard technique such as e-mail or voice telecommunication.

The system checks to see if the last frequent flyer server 154 for the current frequent flyer has been checked, step 722. If the last frequent flyer server 154 has not been checked for the current frequent flyer, then processing moves back to step 704. Otherwise, the system checks to see if the last frequent flyer's positions have been checked, step 526. If not, then processing moves back to step 702. Otherwise, the system checks the timing loop, in this case a quarter day, for whether it is time to process all of the frequent flyers' positions again, steps 728-730. Once the timer has determined that it is time to check the frequent flyers' positions again, processing moves back to step 700.

With reference to Fig. 8, a block diagram illustrating an exemplary system architecture for another embodiment of the present invention for managing vendor-buyer sales is shown. As with the embodiments shown in Figs. 1, 4 and 6, the system comprises a server 100 comprising an online bid management system 102 for automatically managing an auction. In the case with the

embodiment of Fig. 6, the online bid management system 102 is for determining relative priority for a bids for supplying goods or services to vendors.

As with the server 100 of Figs. 1, 4 and 6, the bid management server 100 comprises a processor electrically connected to a network. As those skilled in the art would recognize, the online bid management server 100 may comprise a standard RISC or CISC processor running the NT operating system by the Microsoft Corp. of Redmond, Washington, or a suitable UNIX server such as an ENTERPRISE Server by Sun Microsystems of Palo Alto, California, or an AS400 System by the IBM Corporation, USA.

Bids are made from bidder terminals 181 (called vendor terminals in Fig. 8) which may comprise Internet terminals with keyboards as one skilled in the art would recognize. A vendor may enter a bid into the online bid management system 102 through a bidder terminal 181, which transmits the bid to the bid management server 100. As it receives bids from bidder terminals 181, the online bid management system 102 prioritizes the bids periodically. The online bid management system 102 determines continuing priority for providing an ongoing service to the frequent flyers.

The relative priorities for the vendors providing goods or services to the buyers are dependent on whether the vendors' bids entered into the vendor terminals 181 are lower than other vendors bids entered.

The bid management server 100 may further comprise a database 104 comprising a relational database management system (RDBMS) 104 for storing bids and data relating to the goods or services to be provided to the buyers. Vendors may further enter minimum and/or maximum bids into the bidder terminals 181. The online bid management system 102 keeps

track of the minimum and maximum bids for each vendors who enters bids into the bidder terminals 181 into RDBMS 104. The online bid management system 102 will start with the maximum bid from each vendor and increment the higher bids until they reach desired bidding positions entered by the vendors as long as the bids do not fall below the minimum values entered by the respective vendors. Thus, the online bid management system 102 causes the relative priority for a first vendor's selling of goods or services to a buyer to change with respect to the priority for a second vendor's selling of goods and services to the buyer by lowering the first vendor's bid until the priority for first vendor exceeds the second vendor's priority, or until a desired priority position for the first vendor is reached. The online bid management system is further programmed to check and lower bids a plurality of times, pausing for a fixed period of time between each checking and lowering of bids.

For the embodiment of Fig. 8, the service provided to the users of bidder terminals 181 comprises providing ranking of priority for selling to several buyers having buyer servers 156. On their buyer servers 154, buyers may rank the order in which each buyer uses vendors who desire to sell goods or serves to the buyers. For example, a buyer may need to purchase personal computers from vendors in the amount of 100,000 units. Bids may be accepted for priority for buying computers from selected vendors, the lowest biding vendor having the opportunity to provide as many computers as that vendor can supply, with other vendors bidding more than the lowest bidder selling units until the full number of desired units have been purchased. The system may comprise a method for selling and purchasing in lots or groups of units instead of individual units for high volume sales. The online bid management system 102 receives minimum and maximum bids from a plurality of vendors who desire to sell goods or services.

One of the plurality of buyer servers 154a may be directly, electrically, connected to the online bid management sever 100 to facilitate faster updating of ranking of bids for purchasing goods. Similarly, a vendor terminal 181a may be directly electrically connected to the online bid management server 100 so that bids may be updated faster to the online bid management system 102.

As an alternative to having a centralized bid management system 102, the online bid management system 102 may be stored locally on one or more vendor terminals 181b. The vendor terminal 181b comprises or is electrically connected to an RDBMS 104 which keeps track of bids made on the vendor terminal 181b by one or several vendors. The system on the vendor terminal 181b works in similar fashion to that on the online bid management server 100.

With reference to Fig. 9 a flow diagram illustrating a method performed by the online bid management systems 102 of Fig 8 is shown. The method is for automatically managing the auction for determining relative priority for vendors selling goods or servers to buyers in a system wherein sales are based on the relative value of related bids.. The system is programmed into a series of nested loops. The outer loop, starting at step 900, comprises a timing mechanism which times the updating of bids for a plurality buyer servers 156. At step 902, the system loops through the buyers for which bids for sales are made in the online bid management system 102. At step 904, the system loops through each bid for each vendor who submitted bids for sales to the buyers.

The system checks for whether the vendor's desired position is met for determining sales priority for a particular buyer, step 906. For example, the system checks for whether the vendor's bid is lower than all other bids in the auction for determining priority for selling

computers. Another example allows the vendor to choose a desired sales position, such as third in line for sales priority, and the system can determine the maximum that the vendor's bid can be to obtain the third priority position. If the system finds that the vendor has achieved the desired seating priority in the search engine with respect to the buyer server 156 processed, the system may increase the bid to a maximum which allows the bidder to keep the desired sales priority, step 910. Otherwise, the system decreases the bid without lowering the bid below the minimum bid entered by the vendor, step 912.

The system re-checks the position held by the vendor, step 914. If the desired position is not achieved, step 916, the system checks to see if the vendor had set a notification flag so that the vendor would be notified if the desired position had not been achieved, step 918. If the vendor had desired to be notified, the vendor is notified, step 920. Notification may be by a standard technique such as e-mail.

The system checks to see if the last vendor the current buyer server 156 has been checked, step 922. If the last vendor has not been checked for the current buyer server 156, then processing moves back to step 904. Otherwise, the system checks to see the last buyer server 156 has been processed, step 924. If not, then processing moves back to step 902. Otherwise, the system checks the timing loop, in this case each day, for whether it is time to process all of the vendor' positions again, steps 928-930. Once the timer has determined that it is time to check the vendors' positions again, processing moves back to step 900.

With reference to Fig. 10, a flow diagram illustrating the steps performed by a buyer server 156 is shown. The buyer first places an order, step 1002. Placing an order may comprise sending a broadcast message onto the world-wide-web 130 (Figs, 1, 4, 6 and 8), or by sending

mail to vendors, or e-mail to several vendors. If the order is performed by e-mail, then the vendors may view the e-mail on their respective vendor terminals 181.

The buyer next receives retrieves the current bids placed by the vendors, step 1004. Step 1004 may comprise retrieving the bids from the RDBMS 104, or retrieving bids received on a regular bases from one or more online bid management systems 102.

The buyer server 156 next access the vendor bid record having the highest priority, step 1008. The buyer server 156 next executes a program loop to purchase all needed products or services, step 1010. The buyer server 156 attempts to order as many products as possible from the current vendor, step 1012, which is the vendor with the highest priority on the first run through the loop. The system next checks to see if the buyer's order has been completely filled, step 1014. If the whole order could not be filled with the current vendor, the buyer server 156 accesses the next vendor record having the next highest priority, and processing moves back to step 1010. Otherwise, if the whole order was able to be filled with the current vendor, the processing of the order ends, step 1016.

It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are provided and, since changes may be made in carrying out the above system and method and in the construction set forth without departing from the spirit and scope of the invention, it is intended that any and all matter contained in the above description and shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

CLAIMS

WHAT IS CLAIMED IS:

1. A method for automatically managing an auction for determining relative priority for a service in a system wherein priority is based on the relative value of related bids, comprising:

checking for whether a first bid exceeds a second bid in an auction for determining continuing priority for providing an ongoing service for a first and second bidder, wherein the relative priority for providing the service for the first bidder is dependent on whether the value of the first bid exceeds the value of the second bid, and wherein the relative priority for providing the service for the second bidder is dependent on whether the value of the second bid exceeds the value of the first bid; and

incrementing the first bid to a value exceeding the second bid if the first bid does not exceed the second bid, thereby causing the relative priority for providing service for the first bidder to exceed the priority for providing service for the second bidder.

2. The method of claim 1, further comprising executing the steps of checking and incrementing a plurality of times.

3. The method of claim 2, further comprising pausing for a fixed period of time between each series of steps of checking and incrementing.

4. The method of claim 3, wherein the service to bidders comprises providing ranking of hypertext links to web pages in search results in an on-line web page search engine.

5. The method of claim 4, wherein the ranking of a first hypertext link to a first web page for the first bidder is higher than the ranking of a second hypertext link to a second web page for the second bidder if the first bid is higher than the second bid.

6. The method of claim 5, comprising placing bids on a plurality of search terms which may be typed into the search engine by search engine users wherein different ranking is determined for each search term.

7. The method of claim 6, wherein the ranking of the first hypertext link is higher than the second hypertext link if the first bid is higher than the second bid for each of the plurality of search terms.

8. The method of claim 7, wherein the step of checking and incrementing is executed for a plurality of search engines for a plurality of search terms.

9. The method of claim 1 wherein the service to bidders comprises providing ranking of priority for golf course tee-off times on one or several golf courses.

10. The method of claim 1 wherein the service to bidders comprises providing ranking of priority for airline reservations on one or several airlines.

11. A system for automatically managing an auction for determining relative priority for a service in a system wherein priority is based on the relative value of related bids, comprising:

a processor electrically connected to a network for checking for whether a first bid exceeds a second bid in an auction for determining continuing priority on a server electrically connected to the network for providing an ongoing service for a first and second bidder, wherein the relative priority for providing the service for the first bidder is dependent on whether the value of the first bid exceeds the value of the second bid, and wherein the relative priority for providing the service for the second bidder is dependent on whether the value of the second bid exceeds the value of the first bid, and for incrementing the first bid to a value exceeding the second bid if the first bid does not exceed the second bid, thereby causing the relative priority for providing service for the first bidder to exceed the priority for providing service for the second bidder; and

a database electrically connected to the processor for storing the first and second bids.

12. The system of claim 11, wherein the processor is further for checking and incrementing the first bid a plurality of times.

13. The system of claim 12, wherein the processor is further for pausing for a fixed period of time between each checking and incrementing of the first bid.

14. The system of claim 13, wherein the service to bidders comprises providing ranking of hypertext links to web pages in search results in an on-line web page search engine stored on the server.

15. The system of claim 14, wherein the server is further for ranking of a first hypertext link to a first web page for the first bidder higher than the ranking of a second hypertext link to a second web page for the second bidder if the first bid is higher than the second bid.

16. The system of claim 15, wherein the processor is further for placing bids on a plurality of search terms which may be typed into the search engine by search engine users wherein different ranking is determined for each search term.

17. The system of claim 16, wherein the server is further for setting the ranking of the first hypertext link higher than the second hypertext link in a search result if the first bid is higher than the second bid for each of the plurality of search terms.

18. The system of claim 17, further comprising a plurality of servers electrically connected to the network.

19. The system of claim 18, further comprising a plurality of search engines on the plurality of servers.

20. The system of claim 19, wherein the processor is further for checking and incrementing a plurality of bids for the first bidder on the plurality of search engines.

21. The system of claim 11 wherein the service to bidders comprises providing ranking of priority for golf course tee-off times on one or several golf courses.

22. The system of claim 11 wherein the service to bidders comprises providing ranking of priority for airline reservations on one or several airlines.

23. A system for automatically managing an auction for determining relative priority for vendors for selling to several buyers based on the relative value of related bids, comprising:

a processor electrically connected to a network for checking for whether a first bid is lower than a second bid in an auction for determining priority on a server electrically connected to the network for ranking selling priority for a first and second vendor, wherein the relative priority for selling by the first vendor is dependent on whether the value of the first bid is lower than the value of the second bid, and wherein the relative priority for selling by the second vendor is dependent on whether the value of the second bid is lower than the value of the first bid, and for decrementing the first bid to a value lower the second bid if

the first bid is not lower than the second bid, thereby causing the relative priority for the first vendor exceed the priority for second bidder; and

a database electrically connected to the processor for storing the first and second bids.

ABSTRACT OF THE INVENTION

A method and system for automatically managing an auction for determining relative priority for a service in a system wherein priority is based on the relative value of related bids is disclosed. The method comprises checking for whether a first bid exceeds a second bid in an auction for determining continuing priority for providing an ongoing service for at least a first and second bidder, wherein the relative priority for providing the service for the first bidder is dependent on whether the value of the first bid exceeds the value of the second bid, and wherein the relative priority for providing the service for the second bidder is dependent on whether the value of the second bid exceeds the value of the first bid. The method further comprises incrementing the first bid to a value exceeding the second bid if the first bid does not exceed the second bid, thereby causing the relative priority for providing service for the first bidder to exceed the priority for providing service for the second bidder. The steps of checking and incrementing may be executed a plurality of times. The system may pause for a fixed period of time between each series of steps of checking and incrementing.

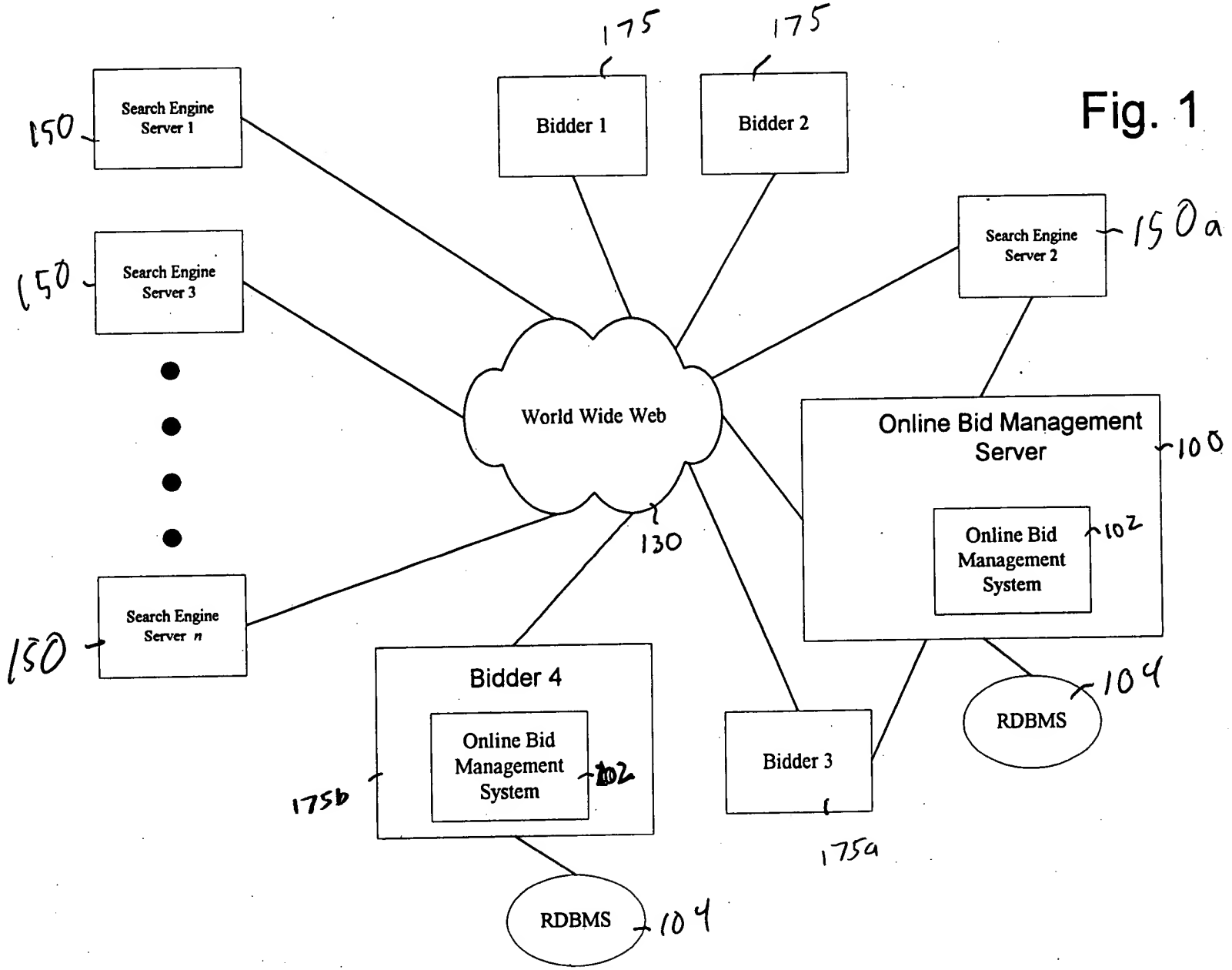

Search Engine Server 1
150
Search Engine Server 3
150
Search Engine Server n
150
Bidder 1
175
Bidder 2
175
Search Engine Server 2
150a
World Wide Web
130
Online Bid Management Server
100
Online Bid Management System
102
Bidder 4
Online Bid Management System
102
175b
Bidder 3
175a
RDBMS
104
RDBMS
104

Fig. 1

Fig. 2

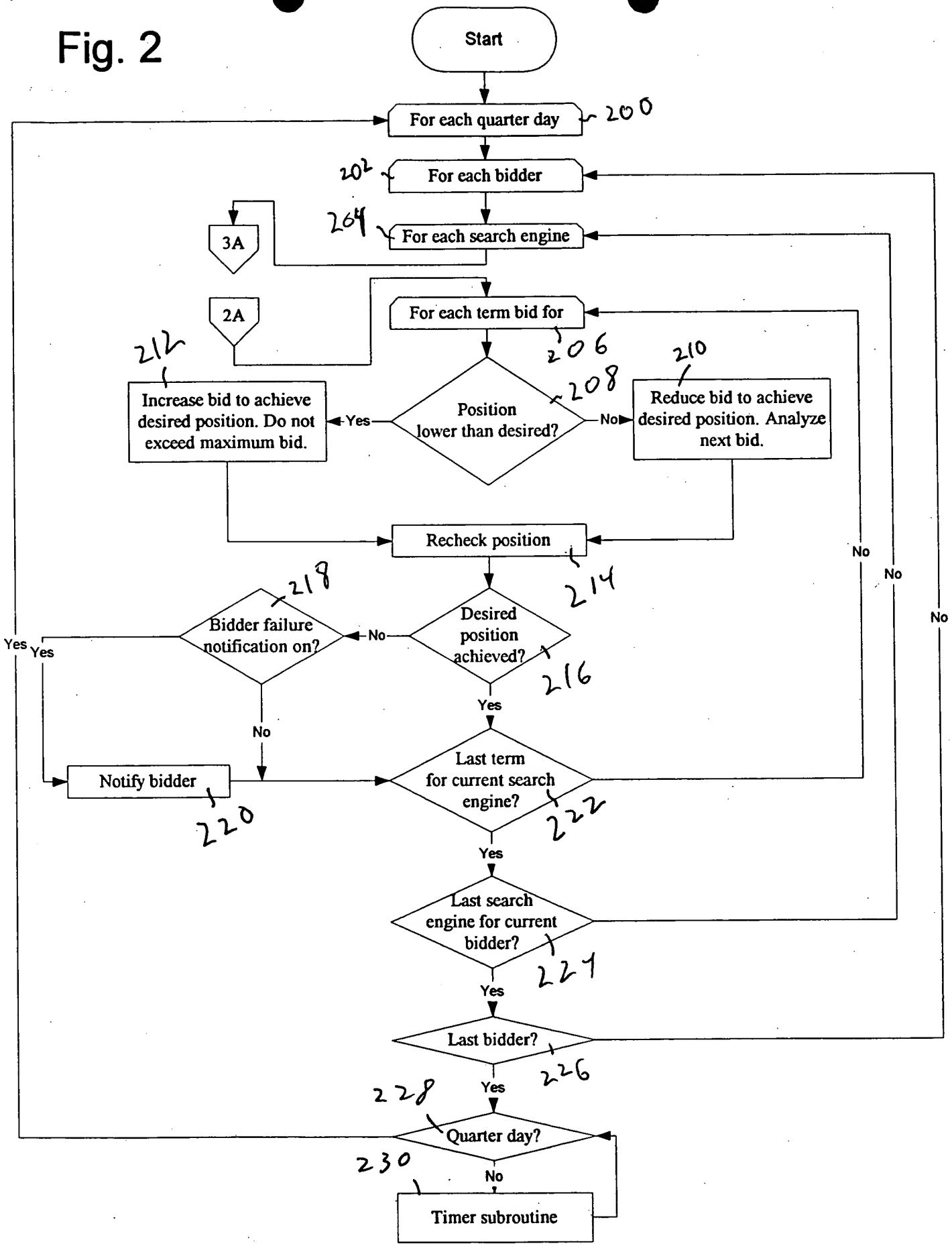
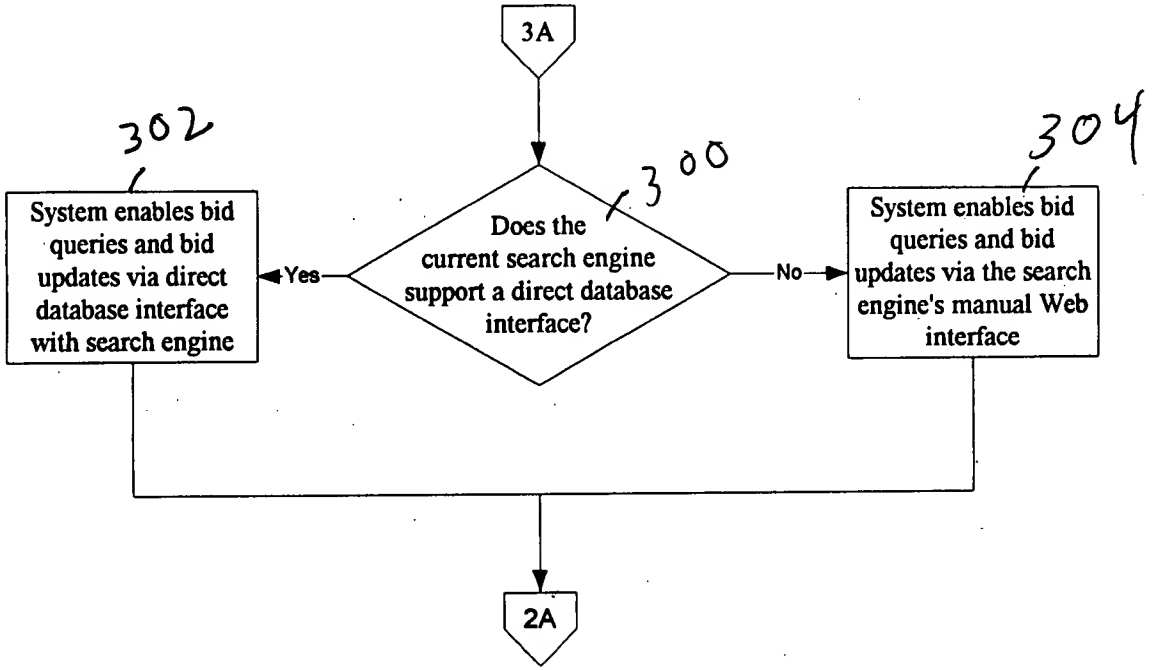

Start
For each quarter day
200
For each bidder
202
For each search engine
264
3A
2A
For each term bid for
206
Position lower than desired?
208
Yes
No
Increase bid to achieve desired position. Do not exceed maximum bid.
212
Reduce bid to achieve desired position. Analyze next bid.
210
Recheck position
214
Desired position achieved?
216
Bidder failure notification on?
218
Yes
No
Notify bidder
220
Last term for current search engine?
222
Last search engine for current bidder?
224
Last bidder?
226
Quarter day?
228
230
Timer subroutine

Fig. 3


3A
302
300
304
System enables bid queries and bid updates via direct database interface with search engine
Yes
Does the current search engine support a direct database interface?
No
System enables bid queries and bid updates via the search engine's manual Web interface
2A

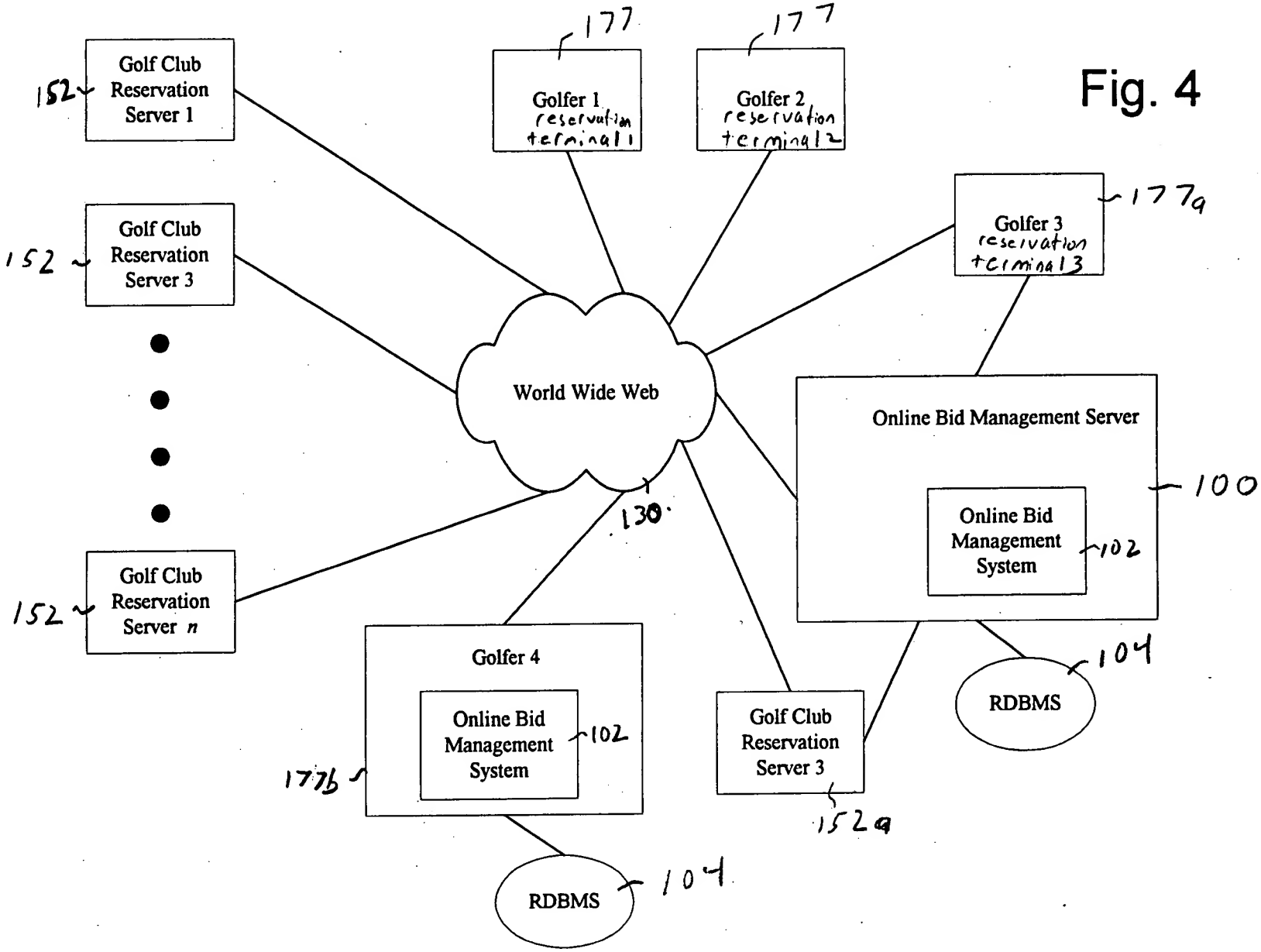
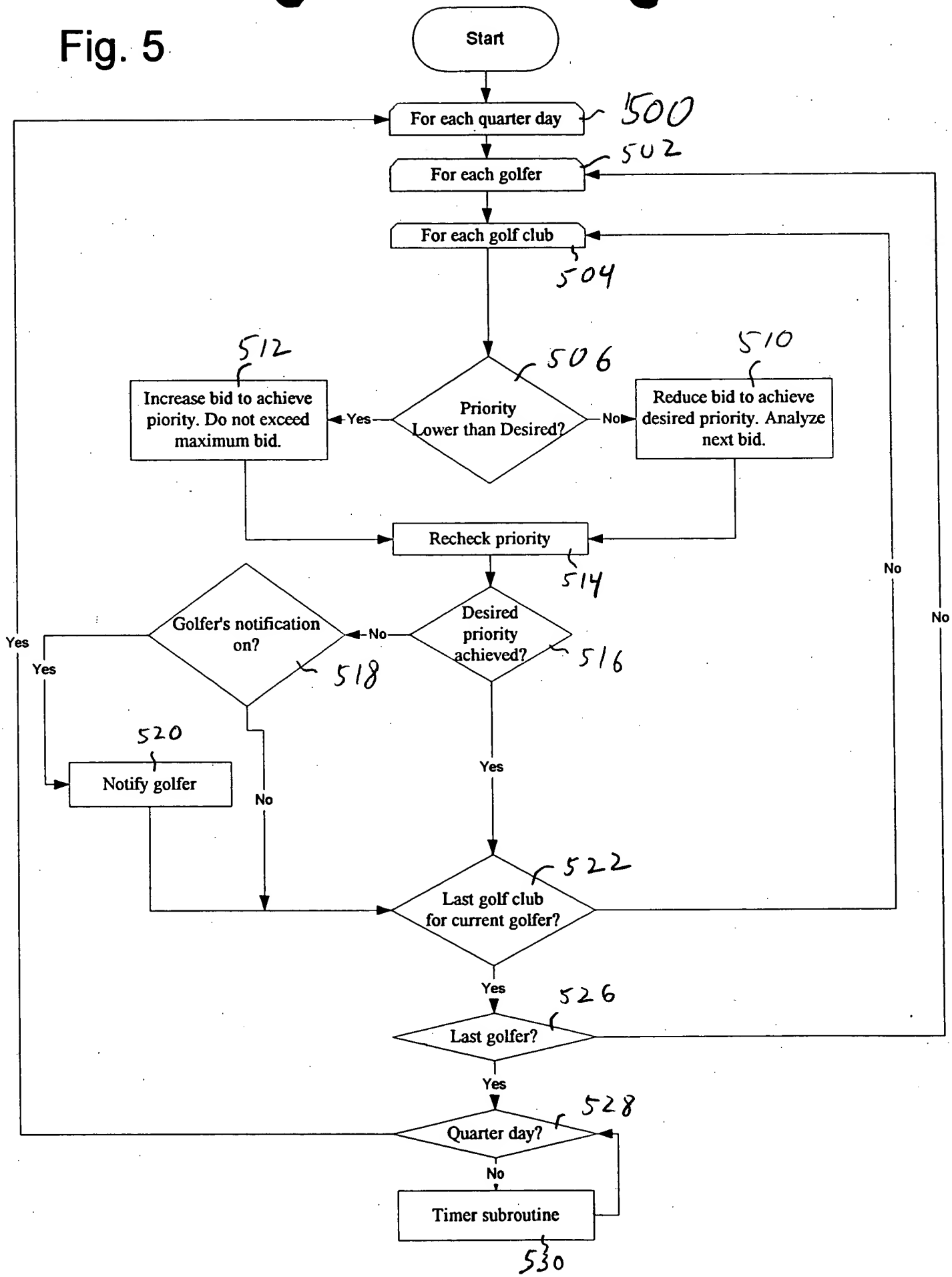

Golf Club Reservation Server 1
152
Golf Club Reservation Server 3
152
Golf Club Reservation Server n
152
177
Golfer 1 reservation terminal 1
177
Golfer 2 reservation terminal 2
Golfer 3 reservation terminal 3
177a
World Wide Web
130
Online Bid Management Server
100
Online Bid Management System
102
RDBMS
104
Golf Club Reservation Server 3
152a
Golfer 4
Online Bid Management System
102
177b
RDBMS
104

Fig. 4

Fig. 5


Start
For each quarter day
500
For each golfer
502
For each golf club
504
Priority Lower than Desired?
506
Yes
No
Increase bid to achieve piority. Do not exceed maximum bid.
512
Reduce bid to achieve desired priority. Analyze next bid.
510
Recheck priority
514
Desired priority achieved?
516
Golfer's notification on?
518
Yes
No
Notify golfer
520
Last golf club for current golfer?
522
Last golfer?
526
Quarter day?
528
Timer subroutine
530

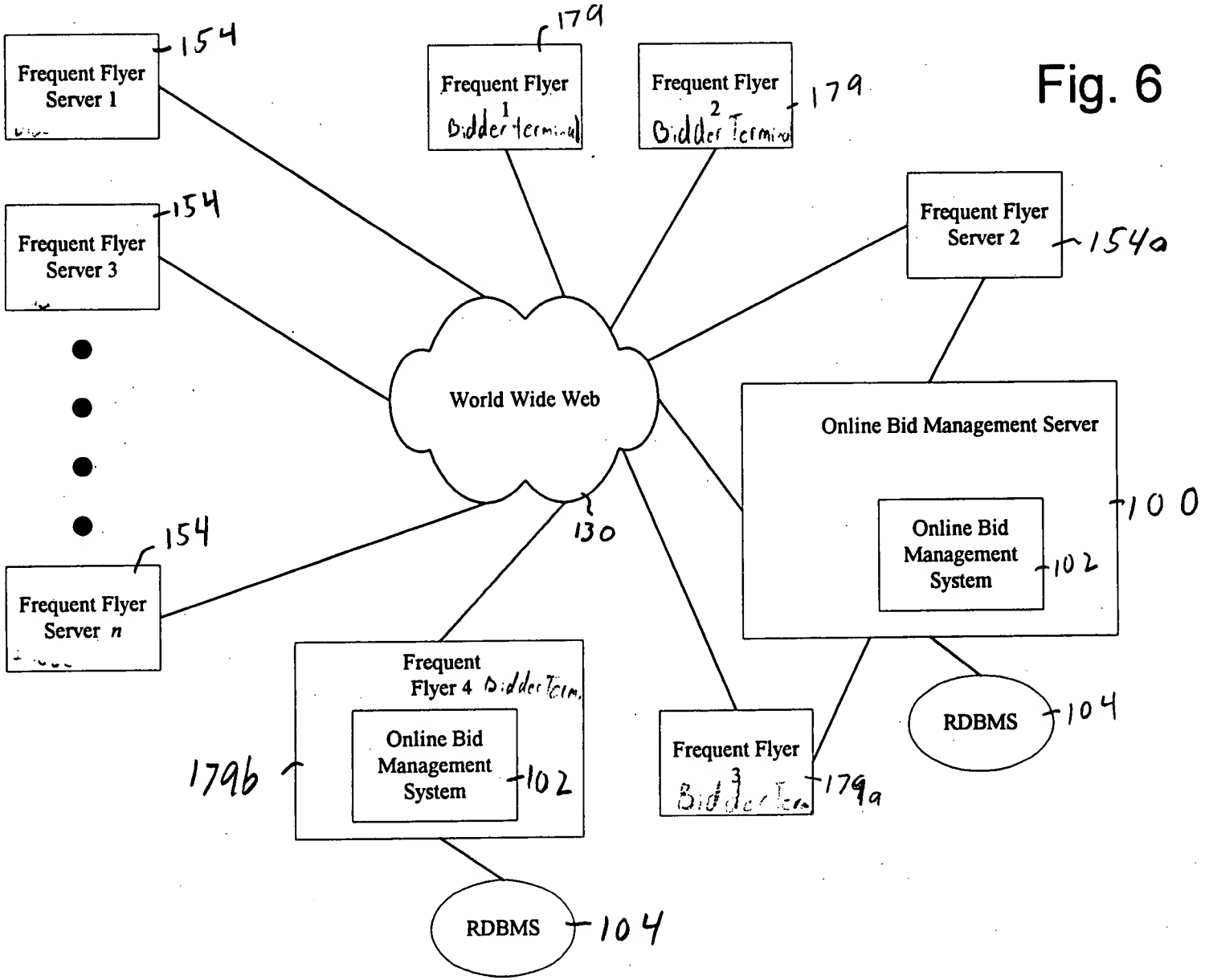
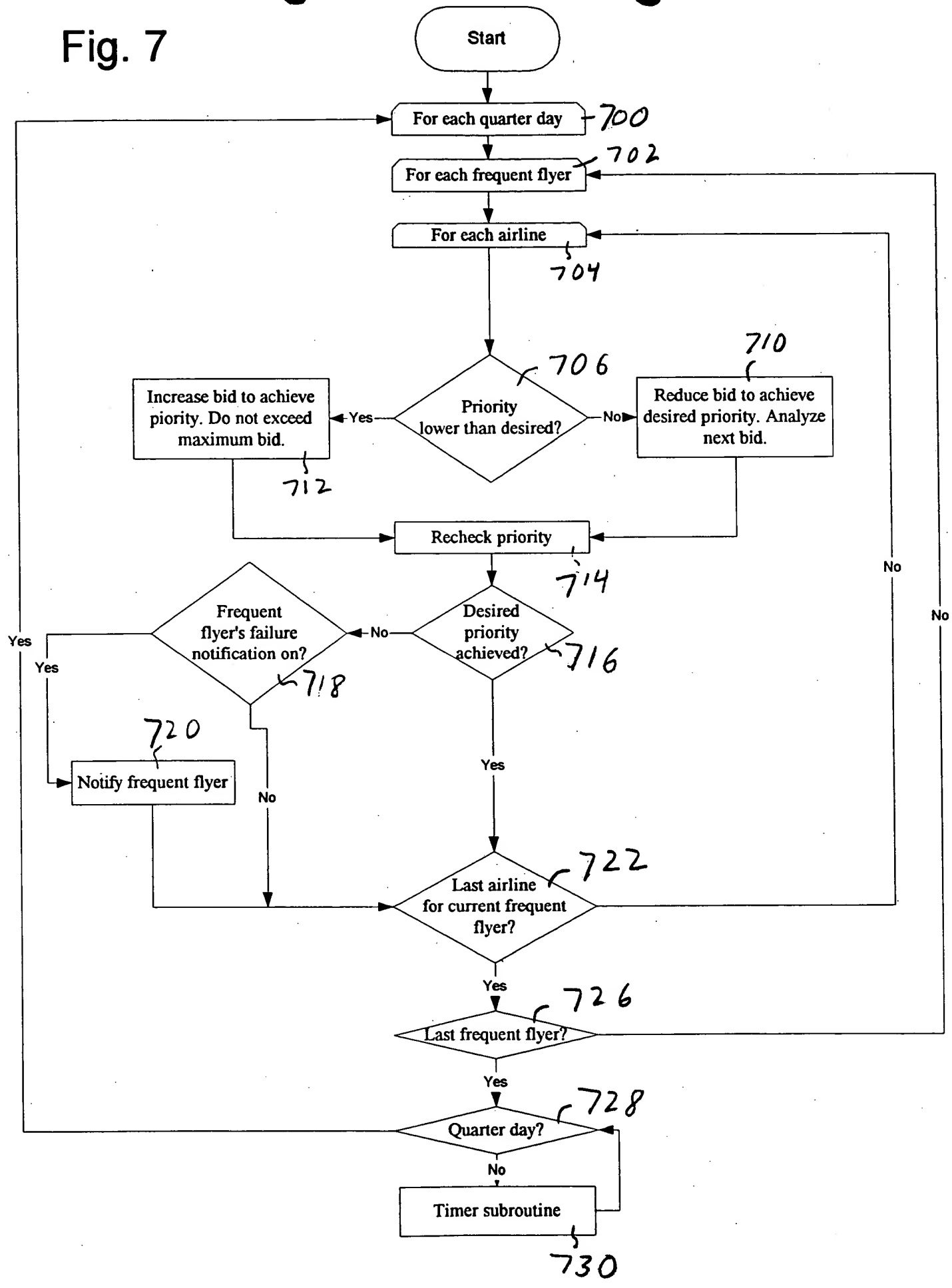

Frequent Flyer Server 1
154
Frequent Flyer 1 Bidder Terminal
179
Frequent Flyer 2 Bidder Terminal
179
Frequent Flyer Server 2
154a
Frequent Flyer Server 3
154
World Wide Web
130
Online Bid Management Server
100
Online Bid Management System
102
Frequent Flyer Server n
154
Frequent Flyer 4 Bidder Term.
179b
Online Bid Management System
102
Frequent Flyer 3 Bidder Term.
179a
RDBMS
104
RDBMS
104

Fig. 6

Fig. 7


Start
For each quarter day
700
For each frequent flyer
702
For each airline
704
Priority lower than desired?
706
Yes
No
Increase bid to achieve piority. Do not exceed maximum bid.
712
Reduce bid to achieve desired priority. Analyze next bid.
710
Recheck priority
714
Desired priority achieved?
716
Frequent flyer's failure notification on?
718
Yes
No
Notify frequent flyer
720
Last airline for current frequent flyer?
722
Last frequent flyer?
726
Quarter day?
728
Timer subroutine
730

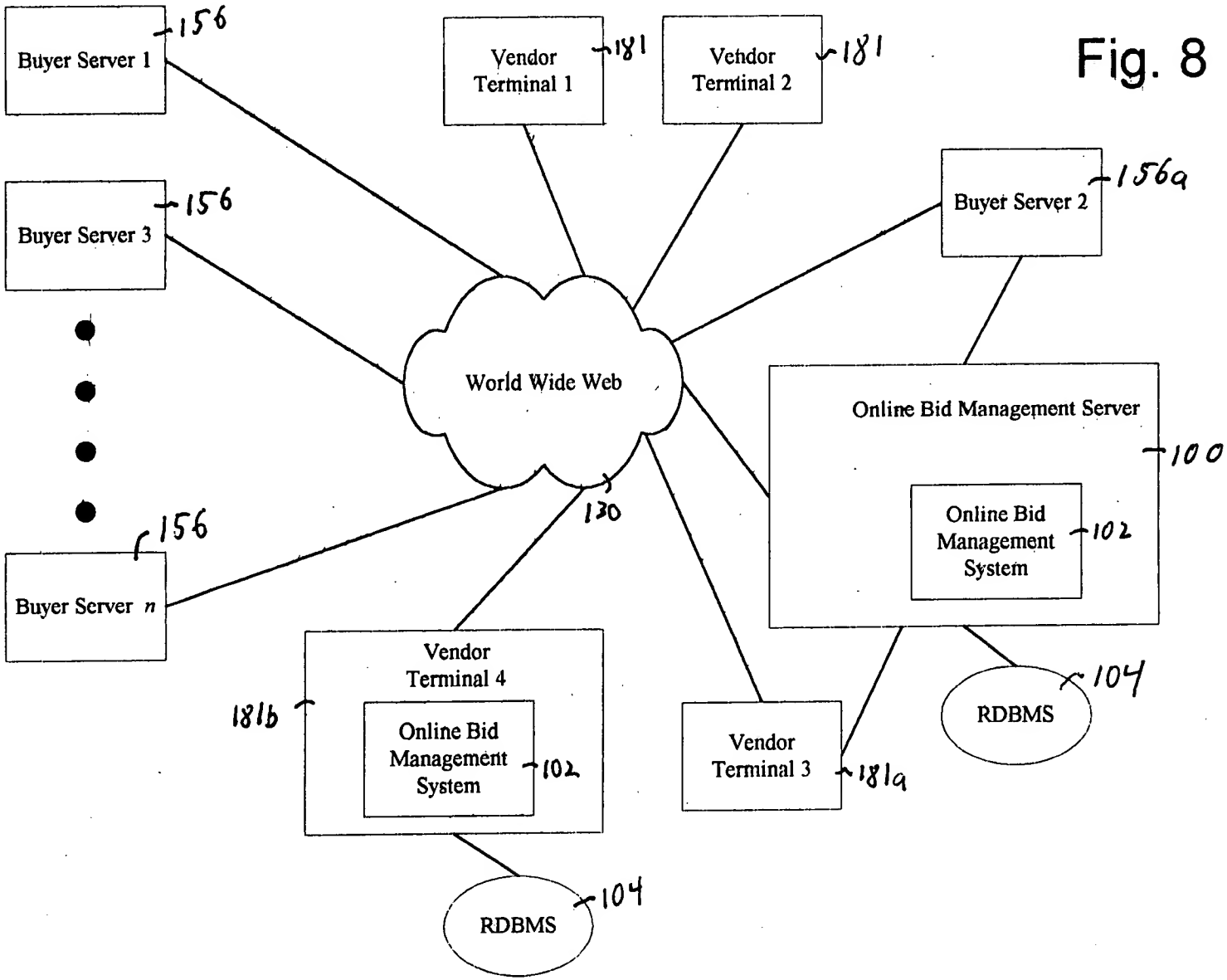

Buyer Server 1
156
Vendor Terminal 1
181
Vendor Terminal 2
181
Buyer Server 3
156
Buyer Server 2
156a
World Wide Web
130
Online Bid Management Server
100
Online Bid Management System
102
156
Buyer Server n
Vendor Terminal 4
181b
Online Bid Management System
102
Vendor Terminal 3
181a
RDBMS
104
RDBMS
104

Fig. 8

Fig. 9

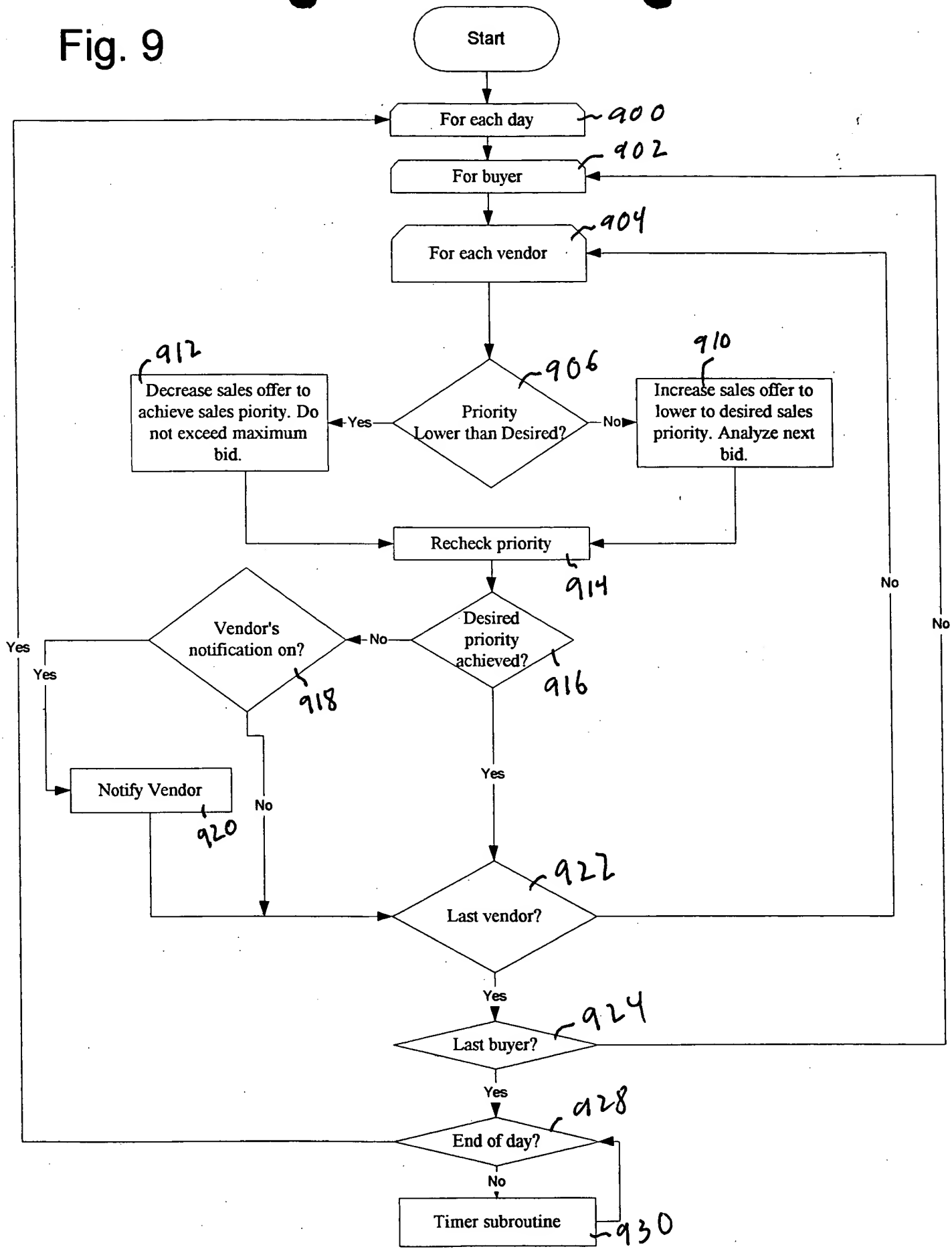
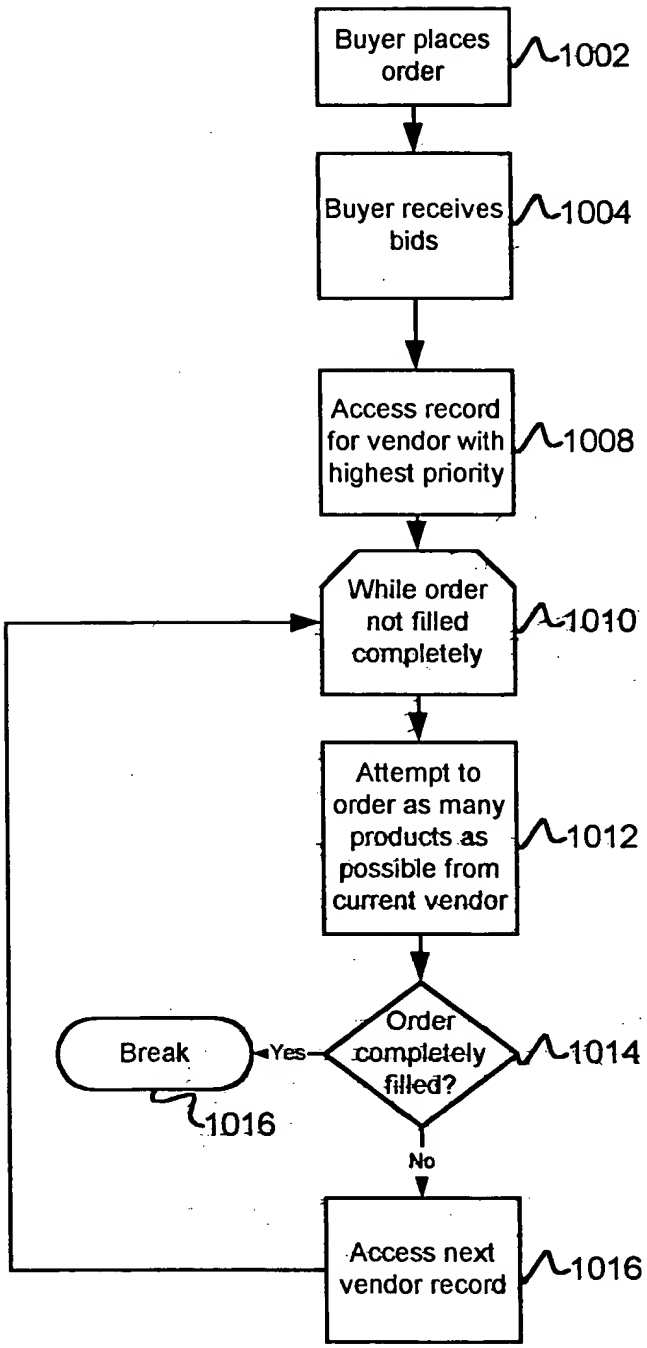

Start
For each day
900
For buyer
902
For each vendor
904
Priority Lower than Desired?
906
Yes
No
912
Decrease sales offer to achieve sales piority. Do not exceed maximum bid.
910
Increase sales offer to lower to desired sales priority. Analyze next bid.
Recheck priority
914
Desired priority achieved?
916
No
Vendor's notification on?
918
Yes
No
Notify Vendor
920
Yes
No
Last vendor?
922
Yes
No
Last buyer?
924
Yes
No
End of day?
928
Yes
No
Timer subroutine
930

Fig. 10


Buyer places order
1002
Buyer receives bids
1004
Access record for vendor with highest priority
1008
While order not filled completely
1010
Attempt to order as many products as possible from current vendor
1012
Order completely filled?
1014
Yes
Break
1016
No
Access next vendor record
1016